Development of the Master Plan

On August 23, 2005, Hurricane Katrina struck the Gulf Coast of the United States, causing the loss of over 1,200 lives and extensive damage across the region, especially in New Orleans. Beyond the immediate safety concerns, the city’s basic infrastructure was devastated, and rebuilding efforts continue today, more than a decade later.

In the wake of the disaster, the Recovery School District (RSD) in New Orleans, Louisiana took a step back to consider the rebuilding process necessary after Katrina. Before Katrina struck, the city had 128 public schools, some of which were underutilized. After 80% of the city was flooded after the storm, school officials undertook an assessment and planning process to look at how many schools were needed and where they were needed.

After further assessments and over 200 public meetings, a Master Plan was developed. The plan called for the renovation or construction of 85 schools across New Orleans, completing construction or renovation on approximately eight schools a year over a ten-year period. This plan would reduce by 43 the number of public schools, allowing RSD to pool resources and create long-lasting, energy-efficient, resilient schools to serve its student population. The new schools would reflect neighborhood demographics, incorporate 21st Century needs, and place the schools as centers of the community.

As public facilities, New Orleans public schools were eligible for recovery funding from the Federal Emergency Management Agency (FEMA). To proceed with the Master Plan, RSD along with the Orleans Parish School Board (OPSB) needed to obtain FEMA approval for an Alternate Project under FEMA policy.1 This policy applies when an applicant determines that “the public welfare would not be best served by either restoring a damaged facility or by restoring the function of a damaged facility.” The policy allows funds to be used to repair or expand other selected facilities, to construct new facilities, purchase equipment, or to fund hazard mitigation measures, subject to conditions.

RSD and OPSB developed a Single Settlement Request, whereby the recovery funds would all be pooled into a single lump sum settlement paid in installments, and be capped. The entities also requested specific processes that would streamline recovery, such as an efficient means for assessing storm damage. Following demonstration of the benefits of the Master Plan to the community and a detailed cost and analysis and comparison, FEMA was able to view the program in total, rather than school-by-school, and the request was approved. In August 2010, the district and school board were awarded just over $2 billion to build back according to the Master Plan.

Under this grant, the two entities are in charge of the budgeting, scheduling, and management responsibilities for their combined recovery efforts. The Master Plan and was amended in 2011 following assessment of revenue, demographics, and mission. The Single Settlement Request Alternate Project approach has now been adopted into federal law.2

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Details of RSD’s Innovative Approach

The first portion of the plan, the Quick Start Initiative, was a short term rebuilding program that saw the immediate reconstruction of six schools throughout New Orleans. These six schools were placed in each of the city’s council districts and served to demonstrate to the community the district’s commitment to rebuild and the value of participating in the master planning process. It was important to all involved that schools were able to reopen and students were able to return to class as soon as possible.

The RSD and OPSB sought to locate replacement schools in strategic locations, where they were most needed and easily accessed. During the community planning process, walkability was ranked as the highest want/need by a focus group comprised of residents. With this in mind, schools were strategically placed around a nexus of community service programs and facilities. For example, it was recommended that cultural sites throughout the city, like museums, be used as integrated learning environments, and that school facilities like auditoriums and sports facilities be offered for shared use by community members. The Master Plan also called for a variety of programs to encourage biking and walking to school.

Renovated and New Schools Are Energy Efficient, Resilient, and Sustainable, to Ensure Long-Term Use for the District

The RSD and OPSB sought to increase resiliency and sustainability measures in the schools to ensure longevity of use and multiple benefits to the community. It was noted in the plan that “the rebuilding of public schools provides an excellent opportunity to develop more energy-efficient facilities and to incorporate sustainability” into facilities design and operation. In support of this vision the plan recommended that the 85 proposed projects be designed and constructed with a goal to be eligible for LEED certification at the Silver Level.

Developed and maintained by the U.S. Green Building Council (USGBC), LEED, or Leadership in Energy and Environmental Design, is a global, regional, and local green building rating system that provides third-party verification of the features, design, construction, maintenance, operation, and effectiveness of green buildings.

Along with the commitment to build to LEED, it was decided schools would go further by striving for more than 30% energy savings, above the ASHRAE 90.1-2004 baseline, for new schools. A goal was set for existing schools undergoing major renovations to achieve a 25% energy savings against the same baseline standard. Additionally, schools were built with future possible storms in mind. For instance, those in flood-prone areas have first floors that are hardened so that they can be easily cleaned out in the event of flooding, and mechanical and electrical systems are housed above ground level to the extent possible. Thoughtful approaches to managing stormwater are throughout the school designs, including landscaped bioswales, water cisterns, and pervious paving.

As of October 2017, 64 projects have been completed, with the remaining 15 in design, construction, or pending.³ (Note that under the

³ Number provided by RSD staff on November 6, 2017

Procedures) https://www.fema.gov/alternative-procedures
most recent revised plan, the RSD was able to further consolidate the number of projects.)

**Benefits of Energy Efficient, Resilient, Sustainable School Construction**

School buildings have an enormous influence on our lives; 1 in 8 people sets foot in a school every day. This presents an opportunity for schools buildings to support students, faculty, and the community in a variety of ways. By leading on resilience, schools can potentially serve as shelters; provide stability to families by restoring operations quickly after a storm; by reducing financial exposure due to damage; and demonstrating attributes and features to make buildings more resilient and efficient.

Rebuilding or renovating schools to above-code standards has a number of positive impacts. Standard building practices use and waste millions of tons of materials each year; green building uses fewer resources and minimizes waste. High-performing schools save energy and water to reduce utility costs for schools; and being highly-efficient also increases opportunities to use renewable energy as a key energy supply during storms and grid outages as well as normal operations.

School facilities have a direct impact on student well-being and learning, as well as staff health. Well-designed school facilities – such as those that are third-party certified -- are proven to have dramatic effects on measurable academic outcomes as well as health indicators among faculty and students alike. For example, specific aspects of indoor air quality—such as the amount of CO2, VOCs, particulates and humidity in the air—have demonstrable impacts on human cognition, student learning, and human health more generally. Access to clean and safe drinking water can increase water intake, which benefits overall health, while reducing risk of lead contamination. And exposure to daylight supports students and faculty as it affects the production of important hormones that impact alertness and sleep/wake cycles.

**LEED**

LEED® is the world’s premiere green building certification system and is applicable to all buildings at all phases of development (design, construction, operations and maintenance). LEED buildings and communities can be found in over 160 countries around the globe, with around 2.2 million square feet being certified daily.

LEED projects are third-party verified, which is based in performance and pushes each project to save energy, water and other resources. Third-party verification also affirms the integrity of green building commitments by guaranteeing that project teams are delivering on design plans and goals.

Constructing schools to proven standards such as LEED helps assure a greater level of performance, reduced lifecycle costs, and improved conditions for student learning and well-being.

Additional Resources:
- FEMA Policy 9525.13
- USGBC Resilience Learning Pathway
- USGBC Policy Brief: USGBC & Resilience: Focused Tools to Enable Sustainable Solutions
- Center for Green Schools
- What is a Green School?

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5 See for example, the CogFX and other studies at Natural Leader.